

In re Patent Application of:  
**WESTPHAL ET AL**  
Serial No. 10/750,373  
Filed: DECEMBER 31, 2003

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**In the Claims:**

Please amend the above-identified application as follows:

Claim 1 (cancelled)

Claim 2 (cancelled)

Claim 3 (currently amended) ~~The optical element of~~  
~~claim 1 An optical element comprising:~~

a. two control inputs,  
b. an optical processing arrangement for producing  
an optical output that corresponds to a logical NOR function  
of the two control inputs, in which the control inputs are  
electrical inputs.

Claim 4 (cancelled)

Claim 5 (currently amended) ~~The optical element of~~  
~~claim 1 An optical element comprising:~~

a. two control inputs,  
b. an optical processing arrangement for producing  
an optical output that corresponds to a logical NOR function  
of the two control inputs in which the optical processing  
arrangement comprises at least one combination of optical  
elements producing respective XOR and COIN function outputs of  
the two control inputs which function outputs are used in  
producing a logical NOR function of the two control inputs.

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Claim 6 (original) The optical element of claim 5 in which the at least one combination of optical elements comprises at least one spatial light modulator.

Claim 7 (original) The optical element of claim 6 in which the at least one combination of optical elements comprises at least one beam splitter.

Claim 8 (original) The optical element of claim 5 in which the at least one combination of optical elements comprises at least one phase modulator.

Claim 9 (original) The optical element of claim 8 in which the at least one combination of optical elements comprises at least one beam splitter.

Claim 10 (original) The optical element of claim 5 in which the at least one combination of optical elements producing respective XOR and COIN function outputs of the two control inputs comprises two beam splitters with one producing an XOR function output and one producing a COIN function output.

Claim 11 (original) The optical element of claim 5 further comprising an optical arrangement comprising at least one beam splitter for combining the XOR function output with the COIN function output to produce an optical output that corresponds to a logical NOR function of the two control inputs.

Claim 12 (original) The optical element of claim 11 in which the XOR function output and the COIN function output

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are combined with a phase shifted version of the same light source used to produce the XOR and COIN function outputs to produce a logical NOR function of the two control inputs.

Claim 13 (original) The optical element of claim 11 in which the optical arrangement comprising at least one beam splitter also produces a logical AND function of the two control inputs.

Claim 14 (cancelled)

Claim 15 (cancelled)

Claim 16 (cancelled)

Claim 17 (cancelled)